

Attorney's Docket No.: 24601-402E  
(17084-004006)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Gyula Hadlaczky, *et al.*  
Serial No. : 09/724,726  
Filed : November 28, 2000  
Cust. No. : 20985  
Title : ARTIFICIAL CHROMOSOMES, USES THEREOF AND METHODS FOR  
PREPARING ARTIFICIAL CHROMOSOMES

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**TRANSMITTAL LETTER**

Transmitted herewith are a Supplemental Information Disclosure Statement (3 pages), Form PTO-1449 (2 pages), cited references (32 documents), and a check in the amount of \$180 for filing in connection with the above-captioned application.

- [X] The Commissioner is hereby authorized to charge any fees that may be due under 37 C.F.R. §§ 1.16-1.17 in connection with this paper or with this application during its entire pendency to Deposit Account No. 06-1050. A duplicate of this sheet is enclosed.

Respectfully submitted,

Stephanie L. Seidman  
Reg. No. 33,779

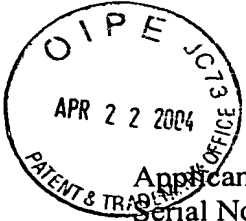
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4/22/04

Stephanie L. Seidman



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Gyula Hadlaczky, *et al.* Art Unit : 1638  
Serial No. : 09/724,726 Examiner : Georgia Helmer  
Filed : November 28, 2000 Conf. No. : 7776  
Cust. No. : 20985  
Title : ARTIFICIAL CHROMOSOMES, USES THEREOF AND METHODS FOR  
PREPARING ARTIFICIAL CHROMOSOMES

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT**

Dear Sir:

Since this Supplemental Information Disclosure Statement is filed after receipt of a first Office Action on the merits for the above-captioned application, the filing fee of \$180 is enclosed. If no proper payment is enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 06-1050.

In accordance with the duty of disclosure imposed by 37 C.F.R. § 1.56 to inform the Patent Office of all references known by Applicant or Applicant's representative that may be material to the examination of the subject application, Applicant hereby provides this Supplemental Information Disclosure Statement that is prepared in accordance with 37 C.F.R. §§ 1.97-1.98. Form PTO-1449 (2 pages) and copies of the cited documents are provided herewith.

The cited documents, listed on Form PTO-1449 and supplied herewith, are in the English language. Hence, in accordance with the requirements of 37 C.F.R. § 1.98, as amended effective March 16, 1992, no further explanation of the listed items is necessary.

The Examiner's attention is directed to the reference Oberle *et al.* (*Biochimica et Biophysica Acta* (2004) 1676:223-230; Item AEE). Oberle *et al.* describes methods for delivering artificial chromosome expression systems (ACEs) to cells. Specifically, Oberle *et*

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Stephanie L. Seidman

*al.* demonstrates that when cells are treated with ultrasound energy and the cationic lipid SAINT-2 or DOTAP prior to contacting them with ACEs, the ACEs are delivered into the cells. Oberle *et al.* states that, prior to its publication, there was no suitable procedure for delivering ACEs into cells because the size of the ACEs was too large to allow internalization of ACEs complexed with cationic lipids or polymers (*see, e.g.*, Abstract at page 223 and page 224, col. 1, para. 3). Oberle *et al.* further states that incubation of ACEs with cationic lipids such as SAINT-2 and DOTAP to prepare ACEs/lipid complexes leads to partial unraveling of the ACEs with a loss of their condensed structure (*see* page 225, col. 1, para. 2). Oberle *et al.* does not provide any data to support these statements.

The instant application, however, describes the introduction of artificial chromosomes, including ACEs, into cells by lipid-mediated transfection (*see, e.g.*, p. 10, line 30 – p. 11, line 4; p. 48, lines 18-29; p. 49, line 29 – p. 50, line 12; Example 3 beginning at p. 81; and Example 14 beginning at p. 168), as well as in U.S. Patent No. 6,025,155, which is a parent application of the instant application.

Applicant also makes known to the Examiner the following U.S. applications which are commonly owned and/or have one or more inventors in common:

<u>U.S.S.N.</u>	<u>Filing Date</u>	<u>Docket No.</u>
10/782,129	02/18/04	24601-402O
10/808,689	03/24/04	24601-402P

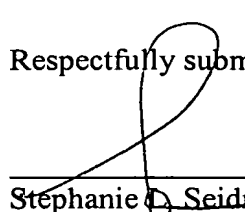
Although these documents are made known to the Patent and Trademark Office in compliance with Applicant's duty of disclosure, such disclosure is not to be construed as an admission by Applicant or Applicant's representative that any of the references, singly or in combination thereof, is effective as prior art against the subject application. In accordance with 37 C.F.R. § 1.97(h), the filing of this Supplemental Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 C.F.R. § 1.56(b) exists.

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Attorney's Docket No.: 17084-004006  
(formerly 24601-402E)

Applicant respectfully requests that the Examiner review the foregoing references and information and that they be made of record in the file history of the above-captioned application.

Respectfully submitted,

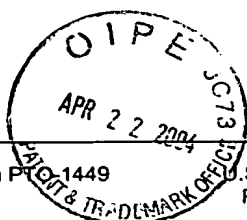


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Substitute Form PTO-1449 (Modified)  <b>Information Disclosure Statement by Applicant</b> (Use several sheets if necessary)  (37 CFR §1.98(b))	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 24601-402E (17084-004006)	Application No. 09/724,726
	Applicant Gyula Hadlaczky, et al.		
	Filing Date November 28, 2000	Group Art Unit 1638	

**U.S. Patent Documents**

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
		NONE					

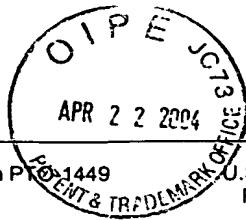
**Foreign Patent Documents or Published Foreign Patent Applications**

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
		NONE						

**Other Documents (include Author, Title, Date, and Place of Publication)**

Examiner Initial	Desig. ID	Document
	AA	T. Asahara <i>et al.</i> , "Stem cell therapy and gene transfer for regeneration," <i>Gene Therapy</i> , <u>7</u> :451-457, 2000
	AB	M.D. Bennett <i>et al.</i> , "DNA DENSITY IN MITOTIC AND MEIOTIC METAPHASE CHROMOSOMES OF PLANTS," <i>J Cell Sci</i> , <u>63</u> :173-179 (1983)
	AC	Blochlinger and Diggelmann, "Hygromycin B Phosphotransferase as a Selectable Marker for DNA Transfer Experiments with Higher Eucaryotic Cells," <i>Molecular and Cellular Biology</i> , <u>4</u> (12):2929-2931, 1984
	AD	Judith K. Christman <i>et al.</i> , "Amplification of expression of hepatitis B surface antigen in 3T3 cells cotransfected with a dominant-acting gene and cloned viral DNA," <i>Proc. Natl. Acad. Sci USA</i> , <u>79</u> :1815-1819, 1982
	AE	Edward C. Cocking, "Plant-animal cell fusions," <i>Cell fusion, Pitman Books, London (Ciba Foundation symposium 103)</i> , pp 119-128, (1984)
	AF	F. Constabel, "Somatic Hybridization in Higher Plants," <i>In Vitro</i> , <u>12</u> (11):743-748, 1976
	AG	Fred H. Gage, "Cell therapy," <i>NATURE</i> , <u>392</u> (SUPP):19-24, 1998
	AH	Cord Hemann <i>et al.</i> , "High-Copy Expression Vector Based on Amplification-Promoting Sequences," <i>DNA AND CELL BIOLOGY</i> , <u>13</u> (4):437-445, 1994
	AI	C. Weldon Jones <i>et al.</i> , "Interkingdom Fusion Between Human (HeLa) Cells and Tobacco Hybrid (GGLL) Protoplasts," <i>Science</i> , <u>193</u> :401-403, 1976
	AJ	Teresa S. Lopes <i>et al.</i> , "Mechanism of high-copy-number integration of pMIRY-type vectors into the ribosomal DNA of <i>Saccharomyces cerevisiae</i> ," <i>Gene</i> , <u>105</u> :83-90, 1991
	AK	Maluszynska and Heslop-Harrison, "Localization of tandemly repeated DNA sequences in <i>Arabidopsis thaliana</i> ," <i>The Plant Journal</i> , <u>1</u> (2):159-166, 1991
	AL	Barbara McClintock, "THE FUSION OF BROKEN ENDS OF CHROMOSOMES FOLLOWING NUCLEAR FUSION," <i>GENETICS</i> , <u>28</u> :458-463, 1942
	AM	Agnes Miranda <i>et al.</i> , "Agrobacterium tumefaciens Transfers Extremely Long T-DNAs by a Unidirectional Mechanism," <i>Journal of Bacteriology</i> , <u>174</u> (7):2288-2297, (1992)
	AN	Minoru Murata <i>et al.</i> , "Centromeric repetitive sequences in <i>Arabidopsis thaliana</i> ," <i>Jpn. J. Genet.</i> , <u>69</u> :361-370, 1994
	AO	A.S. Parokonny, <i>et al.</i> , "Genome reorganization in <i>Nicotiana</i> asymmetric somatic hybrids analysed by <i>in situ</i> hybridization," <i>The Plant Journal</i> , <u>2</u> (6):863-874, 1992

Examiner Signature	Date Considered
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	



Substitute Form PTO-1449 (Modified)		U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 24601-402E (17084-004006)	Application No. 09/724,726
Information Disclosure Statement by Applicant (Use several sheets if necessary)  (37 CFR §1.98(b))			Applicant Gyula Hadlaczky, et al.	
			Filing Date November 28, 2000	Group Art Unit 1638
Other Documents (include Author, Title, Date, and Place of Publication)				
Examiner Initial	Desig. ID	Document		
	AP	Eric J. Richards, "Plant Telomeres," <i>COLD SPRING HARBOR LABORATORY PRESS</i> , pp 371-387, 1995		
	AQ	Stephen G. Rogers, et al., "Gene Transfer in Plants: Production of Transformed Plants Using Ti Plasmid Vectors," <i>METHODS FOR PLANT MOLECULAR BIOLOGY</i> , pp 423-436, 1988		
	AR	Samstein and Platt, "Physiologic and Immunologic Hurdles to Xenotransplantation," <i>J. Am. Soc. Nephrol.</i> , 12:182-193, 2001		
	AS	Renate Schmidt et al., "Physical Map and Organization of Arabidopsis thaliana Chromosome 4," <i>SCIENCE</i> , 270:480-483, 1995		
	AT	Elio Sparvoli et al., "Replicon clusters may form structurally stable complexes of chromatin and chromosomes," <i>Journal of Cell Science</i> , 107:3097-3103, 1994		
	AU	T.M. Spencer et al., "Bialaphos selection of stable transformants from maize cell culture," <i>Theor Appl Genet</i> , 79:625-631, 1990		
	AV	F. Stolzenburg et al., "Structural homologies and functional similarities between mammalian origins of replication and amplification promoting sequences," <i>CHROMOSOMA</i> , 209-214, 1994		
	AW	Charles J. Thompson et al., "Characterization of the herbicide-resistance gene bar from <i>Streptomyces hygroscopicus</i> ," <i>The EMBO Journal</i> , 6(9):2519-2523, 1987		
	AX	Juan M. Vega et al., "Chromosome painting in plants: <i>In situ</i> hybridization with a DNA probe from a specific microdissected chromosome arm of common wheat," <i>Proc. Natl. Acad. Sci. USA</i> , 91:12041-12045, 1994		
	AY	Joan E. Vickers et al., "A Protocol for the Efficient Screening of Putatively Transformed Plants for bar, the Selectable Marker Gene, Using the Polymerase Chain Reaction," <i>Plant Molecular Biology Reporter</i> , 14(4):363-368, 1996		
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	ADD	V. Oberle, et al., "Efficient transfer of chromosome-based DNA constructs into mammalian cells," <i>Biochim Biophys Acta.</i> , 1676 (3):223-230 2004		
	AEE	G. de Jong, et al., "Efficient <i>in-vitro</i> transfer of a 60-Mb mammalian artificial chromosome into murine and hamster cells using cationic lipids and dendrimers," <i>Chromosomes Res.</i> , 9 (6):475-485 2001		
	AFF	S. Vanderbyl, et al., "A Flow Cytometry Technique for Measuring Chromosome-Mediated Gene Transfer," <i>Cytometry</i> , 44 (2):100-105 2001		

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